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ABSTRACT

Statistics regarding Australians participating in apprenticeships and traineeships in the mechanical engineering and fabrication trades in 1995-1999 were reviewed to provide an indication of where skill shortages may be occurring or will likely occur in relation to the following occupations: mechanical engineering trades; fabrication engineering trades; mechanical engineering associate professional; and metallurgical and materials technician. The review focused on the following items: commencements, number in training, and completions; age; Australian Qualifications Framework level; geographic region by state/territory; school attendance status; other training; and enrollment figures versus projected employment trends. The following were among the main findings: (1) in 1995-1998 both mechanical engineering and fabrication trade occupation groups experienced declines in commencements but strong growth in commencements in 1998; (2) the mechanical engineering trade occupation experiences a decline in completions in 1995-1998, whereas the fabrication occupation growth experienced growth in completions in 1995-1998 (10% annually); (3) indications are that the number of apprentices and trainees in the mechanical

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and fabrication engineering tradespersons category will decrease from the current level of around 9%; and (4) although employment in manufacturing is expected to experience low growth over the short term, specific employment growth rates differ significantly within by subdivision of the industry. (Contains 26 tables.) (MN)

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Australian apprentice and trainee statistics

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Mechanical engineering and fabrication trades

1995 – 1999

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AUSTRALIAN
APPRENTICE
& TRAINEE
STATISTICS

Mechanical Engineering and Fabrication Trades 1995 to 1999

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1 Introduction

The purpose of this report is to provide information on trends over the years 1995 to 1998 in the realm of contracts of training in vocational education and training in the mechanical engineering and fabrication trade occupations in Australia. Initial raw data are also provided for 1999. This information will be used to provide an indication of where skill shortages may be occurring or likely to occur in relation to specific mechanical engineering and fabrication trade occupations.

The mechanical engineering and fabrication trade occupations for which apprentice and trainee data are considered in this report are:

- Mechanical engineering trades (ASCO code 411)
- Fabrication engineering trades (412)
- Mechanical engineering associate professionals (3125)
- Metallurgical and materials technician (3129-13).

A more detailed, sub-category investigation of apprentice and trainee numbers is provided for each of these trade occupation areas.

Comparisons of apprentice and trainee numbers are also made with projections of employment growth in the mechanical engineering and fabrication trade occupations.

Provision of this information will help to identify skill shortages for, or within, particular mechanical engineering and fabrication trade occupations or whether current shortages in trade occupations are likely to be overcome in the short-term.

Factors including widespread technological changes, the requirement of trade industries for more highly skilled and productive apprentices, increased competition in world trade and the need to improve the transition from school to work have had a major impact on the employment-based training system in Australia.

The government has reformed the apprenticeship and trainee system by making it more flexible and responsive to employer needs and ensuring that quality training is provided. The new training arrangements covering apprenticeships and traineeships are collectively known as New Apprenticeships which the government began introducing from 1 January 1998.

This report focuses on providing more detailed information on such factors as trends in numbers in training, commencements and completions, in relation specifically to mechanical engineering and fabrication trade occupation contracts of training (that is, predominately apprenticeships). This information is provided in the context of relevant economic and labour market information.

The employment forecast information utilised in this report is based on the data provided by Chris Murphy and Justin Douglas of Econtech in their report commissioned by the NCVER entitled *The Outlook for Jobs*.

Contract of training data considerations

The contract of training figures for 1995 through 1998 in this report have been derived from apprentice and trainee information available in the NCVER's December 1999 Contracts of Training collection. It should be noted that the figures may change slightly in subsequent collections owing to the processing of late returns. It also follows that any growth rates presented may also change in the future.

The contract of training figures for 1999 in this report are estimated figures calculated by the NCVER based on the latest data available (preliminary reported data for December quarter 1999) at the time of this report. These estimates are used to take into account data reporting lags that occur resulting in all 1999 activity not yet being reported to or known by the NCVER. The figures for 1999 used in this report may therefore differ from those published at a later date and should be used with caution.

Figures in this report have been rounded to the nearest 100, whereas growth rates have been based on unrounded figures.

Owing to missing historic information for one jurisdiction, 1995 and 1996 completions data has been derived from the December 1998 Apprentice and Trainee data.

2 Commencements, number in training and completions, 1995 to 1999

This section focuses on trends in commencements and numbers in training from 1995 to 1999.

For commencements (table 1):

- From 1995 to 1998, both the mechanical engineering and fabrication trade occupation groups experienced a decline in commencements with annual growth rates of –4.5% and –2.1% respectively.

- Strong growth in commencements in 1998 occurred for both the mechanical engineering and fabrication trade occupation groups (18.9% and 41.7% respectively).

- Based on preliminary 1999 data, indications are that commencements for mechanical engineering have risen in 1999. Commencements in fabrication trades have fallen in 1999.

For the number in training (table 2):

- Over the period 1995 to 1998, both the mechanical engineering and fabrication trade occupation groups experienced a decline in the number in training with annual growth rates of –4.4% and –0.7% respectively.

- Based on preliminary 1999 data, indications are that the number in training for all mechanical engineering and fabrication trades fell to around 18,850 at the end of 1999.

For completions[1] (table 3):

- From 1995 to 1998, the mechanical engineering trade occupation group experienced a decline in completions with an annual growth rate of –2.9%. On the other hand, the fabrication trade occupation group experienced growth in completions from 1995 to 1998 with an annual growth rate of 10.0%.

- Based on preliminary 1999 data, indications are that completions for all mechanical engineering and fabrication trades fell slightly in 1999.

[1] It should be noted that completions data should be treated with caution due to the possibility of under-reporting.

Trends in specific occupations, 1995 to 1998

This sections comments on trends specifically in relation to the 4-digit occupations under review. These trends should be viewed with some caution however as 4-digit occupation codes are unknown for relatively large numbers of apprentices and trainees.

For commencements over the period 1995 to 1998:

- Within mechanical engineering, all 4-digit groups experienced strong declines except the general mechanical engineering tradespersons occupation.

- Within fabrication, most 4-digit groups experienced strong declines except the general fabrication engineering tradespersons occupation.

- The number of commencements in the mechanical engineering technicians occupation grew strongly from 470 in 1995 to 2,220 in 1997 however commencements in this occupation fell to 2,030 during 1998.

For the number in training over the period 1995 to 1998:

- Within mechanical engineering, all 4-digit groups experienced declines except the general mechanical engineering tradespersons occupation which experienced growth over the period 1995 to 1998, particularly from 1997 to 1998 (69.1%).

- Within fabrication, most 4-digit groups experienced strong declines in commencements. The major exception was the general fabrication engineering tradespersons occupation which experienced steady growth.

- While the number in training in the mechanical engineering associates occupation category remained steady over 1995 to 1998, there was strong growth in the number in training for the mechanical engineering technicians occupation category, from 410 at the end of 1995 to 1970 at the end of 1997. The number in training fell to 1,820 by the end of 1998.

For completions over the period 1995 to 1998[2]:

- Within mechanical engineering, most 4-digit groups experienced declines. The general mechanical engineering tradespersons and toolmakers occupations however experienced strong growth.

- Within fabrication, most 4-digit groups experienced declines in completions. The notable exception was the general fabrication engineering tradespersons occupation.

- The number of commencements in the mechanical engineering technicians occupation grew strongly from 10 in 1995 to 810 in 1998.

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[2] It should be noted that completions data should be treated with caution due to the possibility of under-reporting.

Table 1: Mechanical and fabrication engineering trade occupation commencements, 1995 to 1999

		Number					Annual growth rate* 1995-1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
Mechanical engineering		1995	1996	1997	1998	*1999 (p)*			
4111	General mech. engineering tradespersons	160	130	200	530	*1200*	50.3	13.1	165.2
4112	Metal fitters and machinists	1980	1350	920	500	*320*	-36.7	-31.9	-45.3
4113	Toolmakers	50	50	40	(a)	*(a)*	-47.7	-13.1	-81.1
4114	Aircraft maintenance engineers	320	270	230	140	*120*	-24.3	-15.3	-39.5
4115	Precision metal tradespersons	220	130	110	80	*60*	-29.3	-30.1	-27.6
Other 411	Mechanical engineering tradespersons not known at 4-digit level	970	1190	1210	1950	*1640*	26.4	11.8	61.8
All 411 sub total		**3690**	**3120**	**2700**	**3210**	***3,330***	**-4.5**	**-14.5**	**18.9**
Fabrication									
4121	General fabrication engineering tradespersons	610	660	600	740	*860*	6.6	-0.4	22.1
4122	Structural steel and welding tradespersons	800	510	270	220	*80*	-35.3	-42.4	-18.4
4123	Forging tradespersons	30	40	30	30	*30*	-4.5	-8.4	3.8
4124	Sheetmetal tradespersons	320	160	60	60	*30*	-43.6	-55.1	-10.9
4125	Metal casting tradespersons	70	30	30	10	*20*	-46.3	-38.3	-59.3
4126	Metal finishing tradespersons	10	10	(a)	(a)	*(a)*	-57.5	-72.3	0.0
Other 412	Fabrication engineering tradespersons not known at 4-digit level	1270	1160	1080	1870	*1380*	13.9	-7.9	74.2
All 412 sub total		**3110**	**2560**	**2060**	**2920**	***2390***	**-2.1**	**-18.6**	**41.7**
Other									
3125-11	Mechanical engineering associates	30	20	20	20	*30*	-11.6	-1[illegible].0	0.0
3125-13	Mechanical engineering technicians	470	1270	2220	2030	*1490*	62.7	11[illegible].9	-8.4
3129-13	Metallurgical and materials technicians	0	0	0	0	*0*	-	-	-
All 'Other' sub total		**500**	**1290**	**2240**	**2050**	***1520***	**60.0**	**111.4**	**-8.3**
TOTAL		**7300**	**6970**	**7000**	**8180**	***7240***	**3.9**	**-2.1**	**16.9**

* Annual rates of growth are compound growth rates
(p) Initial raw figures only, subject to future updating
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

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Table 2: Mechanical and fabrication engineering trade number in-training, 31 December 1995 to 1999

		Number					Annual growth rate* 1995-1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
Mechanical engineering		1995	1996	1997	1998	*1999 (p)*			
4111	General mech. engineering tradespersons	360	410	490	820	*1860*	31.3	15.7	69.1
4112	Metal fitters and machinists	6780	6070	4990	3510	*2070*	-19.7	-14.2	-29.6
4113	Toolmakers	190	190	170	110	*70*	-17.7	-5.3	-37.9
4114	Aircraft maintenance engineers	1020	1020	940	800	*610*	-7.9	-3.9	-15.4
4115	Precision metal tradespersons	690	610	500	390	*290*	-17.7	-15.4	-22.2
Other 411	Mechanical engineering tradespersons not known at 4-digit level	2380	2920	3380	4380	*4750*	22.6	19.3	29.4
All 411 sub total		**11430**	**11210**	**10470**	**10000**	***9660***	**-4.4**	**-4.3**	**-4.5**
Fabrication									
4121	General fabrication engineering tradespersons	1590	1840	1920	1950	*2140*	7.0	9.7	1.7
4122	Structural steel and welding tradespersons	2470	2270	1780	1220	*670*	-21.0	-15.1	-31.5
4123	Forging tradespersons	100	100	80	90	*80*	-2.1	-6.5	7.1
4124	Sheetmetal tradespersons	920	820	600	370	*170*	-26.1	-19.4	-37.8
4125	Metal casting tradespersons	210	180	150	90	*60*	-24.0	-15.0	-39.2
4126	Metal finishing tradespersons	60	50	30	20	*(a)*	-31.8	-28.1	-38.7
Other 412	Fabrication engineering tradespersons not known at 4-digit level	3060	3520	3770	4500	*4470*	13.7	10.9	19.6
All 412 sub total		**8410**	**8760**	**8330**	**8240**	***7600***	**-0.7**	**-0.5**	**-1.0**
Other									
3125-11	Mechanical engineering associates	70	70	70	70	*60*	1.5	4.4	-4.2
3125-13	Mechanical engineering technicians	410	1060	1970	1820	*1530*	64.9	120.5	-7.7
3129-13	Metallurgical and materials technicians	0	0	0	0	*0*	-	-	-
All 'Other' sub total		**470**	**1120**	**2040**	**1890**	***1600***	**58.8**	**108.2**	**-7.6**
TOTAL		**20310**	**21090**	**20840**	**20130**	***18850***	**-0.3**	**1.3**	**-3.4**

* Annual rates of growth are compound growth rates
(p) Initial raw figures only, subject to future updating
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

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Table 3: Mechanical and fabrication engineering trade completions, 1995 to 1999

		Number					Annual growth rate* 1995-1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
Mechanical engineering		1995	1996	1997	1998	*1999 (p)*			
4111	General mech. engineering tradespersons	30	30	80	110	*210*	47.9	54.3	35.8
4112	Metal fitters and machinists	1990	1740	1670	1660	*1310*	-5.8	-8.3	-0.7
4113	Toolmakers	30	40	40	60	*40*	29.0	24.7	38.1
4114	Aircraft maintenance engineers	560	220	230	260	*260*	-22.4	-35.9	13.5
4115	Precision metal tradespersons	200	150	160	130	*110*	-13.8	-10.2	-20.8
Other 411	Mechanical engineering tradespersons not known at 4-digit level	310	370	520	640	*740*	26.5	28.4	22.6
All 411 sub total		**3120**	**2550**	**2700**	**2850**	***2,660***	**-2.9**	**-6.9**	**5.5**
Fabrication									
4121	General fabrication engineering tradespersons	160	270	340	450	*460*	40.1	43.1	34.2
4122	Structural steel and welding tradespersons	620	530	570	610	*500*	-0.3	-4.0	7.4
4123	Forging tradespersons	20	20	20	10	*20*	-8.6	5.7	-31.6
4124	Sheetmetal tradespersons	230	180	200	200	*160*	-3.7	-6.2	1.5
4125	Metal casting tradespersons	40	40	40	60	*40*	9.0	-3.5	39.0
4126	Metal finishing tradespersons	20	20	10	(a)	*(a)*	-30.7	-25.5	-40.0
Other 412	Fabrication engineering tradespersons not known at 4-digit level	440	450	590	690	*810*	16.2	16.0	16.7
All 412 sub total		**1530**	**1500**	**1770**	**2030**	***1990***	**10.0**	**7.6**	**15.0**
Other									
3125-11	Mechanical engineering associates	30	10	10	20	*20*	-15.7	-27.9	15.4
3125-13	Mechanical engineering technicians	10	160	530	810	*790*	333.4	630.1	52.7
3129-13	Metallurgical and materials technicians	0	0	0	0	*0*	-	-	-
All 'Other' sub total		**40**	**170**	**550**	**830**	***810***	**187.2**	**295.0**	**51.8**
TOTAL		**4680**	**4220**	**5010**	**5710**	***5460***	**6.9**	**3.5**	**13.9**

* Annual rates of growth are compound growth rates
(p) Initial raw figures only, subject to future updating
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

3 Age

This section focuses on trends in commencements and numbers in training from 1995 to 1998 by age.

For commencements:

- Mechanical engineering trade occupation commencements declined for each age group (15 to 19, 20 to 24, and 25 plus years) over the period 1995 to 1997. However, all age groups experienced growth in commencements during 1998 (table 4).

- Fabrication trade occupation commencements declined for each age group (15 to 19, 20 to 24, and 25 plus years) over the period 1995 to 1997. However, all age groups experienced growth in commencements during 1998 (table 5).

- The number of mechanical engineering technician commencements increased strongly over the period 1995 to 1998 for each age cohort (table 6).

For the number in training:

- The mechanical engineering trade occupation number in training declined for each age group (15 to 19, 20 to 24, and 25 plus years) over the period 1995 to 1997. However, the 15 to 19 age group experienced growth in the number in training during 1998 (table 7).

- The fabrication trade occupation number in training declined for the 15 to 19 year old age cohort over 1995 to 1998, grew slightly for the 20 to 24 year old age cohort, and grew strongly for the 25 years and over age cohort (table 8).

- The number of mechanical engineering technicians in training increased strongly over the period 1995 to 1998 for each age cohort. However, there were declines in the number of 20 to 24 year olds in training and those over 25 during 1998 (table 9).

Table 4: Mechanical engineering trade commencements by age, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
4111 General mechanical engineering tradespersons							
15 to 19 years	70	90	90	290	57.8	12.3	212.0
20 to 24 years	20	20	40	120	75.3	28.5	226.3
25 years and over	60	10	70	120	26.0	7.9	71.8
Sub total[1]	**160**	**130**	**200**	**530**	**50.3**	**13.1**	**165.2**
4112 Metal fitters and machinists							
15 to 19 years	1450	1020	700	340	-38.4	-30.4	-51.6
20 to 24 years	310	190	130	90	-33.4	-34.8	-30.5
25 years and over	230	140	90	70	-31.4	-37.7	-16.9
Sub total[1]	**1980**	**1350**	**920**	**500**	**-36.7**	**-31.9**	**-45.3**
4113 Toolmakers							
15 to 19 years	40	50	30	(a)	-54.7	-15.1	-87.1
20 to 24 years	(a)	(a)	(a)	(a)	-20.6	0.0	-50.0
25 years and over	0	0	0	0	-	-	-
Sub total[1]	**50**	**50**	**40**	**(a)**	**-47.7**	**-13.1**	**-81.1**
4114 Aircraft maintenance engineers							
15 to 19 years	220	190	160	80	-28.4	-15.6	-48.4
20 to 24 years	80	70	60	50	-14.6	-11.0	-21.3
25 years and over	20	10	(a)	(a)	-23.7	-33.3	0.0
Sub total[1]	**320**	**270**	**230**	**140**	**-24.3**	**-15.3**	**-39.5**
4115 Precision metal tradespersons							
15 to 19 years	150	100	70	50	-31.1	-33.5	-26.2
20 to 24 years	50	20	20	20	-24.2	-29.3	-13.0
25 years and over	20	20	20	(a)	-28.6	-12.1	-52.9
Sub total[1]	**220**	**130**	**110**	**80**	**-29.3**	**-30.1**	**-27.6**
Other 411 Mechanical engineering tradespersons not known at 4-digit level							
15 to 19 years	760	930	930	1480	25.0	10.6	59.7
20 to 24 years	150	170	210	340	31.7	19.3	60.4
25 years and over	60	90	70	130	30.8	7.4	94.1
Sub total[1]	**970**	**1190**	**1210**	**1950**	**26.4**	**11.8**	**61.8**
ALL MECHANICAL ENGINEERING TRADESPERSONS							
15 to 19 years	2690	2380	1970	2240	-5.9	-14.3	13.4
20 to 24 years	610	470	470	630	0.9	-12.1	32.9
25 years and over	390	260	250	340	-4.0	-19.4	36.0
TOTAL[1]	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
[1] Totals include ages other than those in the range 15 to 64
Source: NCVER unpublished apprentice and trainee data

Table 5: Fabrication engineering trade commencements by age, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	1997 - 1998
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	(%)
4121 General fabrication engineering tradespersons							
15 to 19 years	440	490	440	500	4.0	-0.6	13.9
20 to 24 years	120	120	120	170	12.1	-1.7	45.7
25 years and over	40	50	50	70	15.0	4.4	39.6
Sub total[1]	**610**	**660**	**600**	**740**	**6.6**	**-0.4**	**22.1**
4122 Structural steel and welding tradespersons							
15 to 19 years	660	430	220	70	-51.8	-42.2	-66.5
20 to 24 years	120	70	30	80	-13.1	-47.3	136.4
25 years and over	20	20	10	70	43.5	-26.1	441.7
Sub total[1]	**800**	**510**	**270**	**220**	**-35.3**	**-42.4**	**-18.4**
4123 Forging tradespersons							
15 to 19 years	20	20	20	20	-1.7	-2.5	0.0
20 to 24 years	(a)	10	(a)	(a)	0.0	0.0	0.0
25 years and over	(a)	(a)	(a)	(a)	-26.3	-55.3	100.0
Sub total[1]	**30**	**40**	**30**	**30**	**-4.5**	**-8.4**	**3.8**
4124 Sheetmetal tradespersons							
15 to 19 years	250	140	50	40	-45.0	-53.7	-22.2
20 to 24 years	50	20	10	10	-35.8	-56.6	40.0
25 years and over	10	(a)	0	(a)	-56.3	-100.0	-
Sub total[1]	**320**	**160**	**60**	**60**	**-43.6**	**-55.1**	**-10.9**
4125 Metal casting tradespersons							
15 to 19 years	50	20	20	(a)	-48.7	-36.5	-66.7
20 to 24 years	10	(a)	(a)	(a)	-45.0	-35.5	-60.0
25 years and over	(a)	0	(a)	(a)	-34.1	-62.2	100.0
Sub total[1]	**70**	**30**	**30**	**10**	**-46.3**	**-38.3**	**-59.3**
4126 Metal finishing tradespersons							
15 to 19 years	(a)	(a)	0	(a)	-51.9	-100.0	-
20 to 24 years	(a)	(a)	(a)	0	-100.0	-50.0	-100.0
25 years and over	0	(a)	0	0	-	-	-
Sub total[1]	**10**	**10**	**(a)**	**(a)**	**-57.5**	**-72.3**	**0.0**
Other 412 Fabrication engineering tradespersons not known at 4-digit level							
15 to 19 years	850	880	780	1420	18.7	-4.3	82.7
20 to 24 years	300	180	190	300	0.3	-21.2	62.6
25 years and over	120	100	110	150	8.1	-3.3	35.1
Sub total[1]	**1270**	**1160**	**1080**	**1870**	**13.9**	**-7.9**	**74.2**
ALL FABRICATION ENGINEERING TRADESPERSONS							
15 to 19 years	2280	1980	1530	2060	-3.4	-18.2	34.7
20 to 24 years	620	400	360	570	-2.3	-23.7	60.1
25 years and over	210	180	180	290	11.1	-8.9	65.3
TOTAL[1]	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
[1] Totals include ages other than those in the range 15 to 64
Source: NCVER unpublished apprentice and trainee data

Table 6: All mechanical and fabrication engineering trade commencements by age, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
411 Mechanical engineering trades							
15 to 19 years	2690	2380	1970	2240	-5.9	-14.3	13.4
20 to 24 years	610	470	470	630	0.9	-12.1	32.9
25 years and over	390	260	250	340	-4.0	-19.4	36.0
Sub total†	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**
412 Fabrication engineering trades							
15 to 19 years	2280	1980	1530	2060	-3.4	-18.2	34.7
20 to 24 years	620	400	360	570	-2.3	-23.7	60.1
25 years and over	210	180	180	290	11.1	-8.9	65.3
Sub total†	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**
3125-11 Mechanical engineering associates							
15 to 19 years	20	10	10	10	-14.0	-23.1	7.7
20 to 24 years	(a)	(a)	(a)	(a)	-10.6	0.0	-28.6
25 years and over	0	(a)	0	(a)	-	-	-
Sub total†	**30**	**20**	**20**	**20**	**-11.6**	**-17.0**	**0.0**
3125-13 Mechanical engineering technicians							
15 to 19 years	170	440	820	810	69.0	120.4	-0.6
20 to 24 years	130	360	580	450	49.8	108.6	-22.8
25 years and over	170	470	820	770	65.3	119.5	-6.2
Sub total†	**470**	**1270**	**2220**	**2030**	**62.7**	**116.9**	**-8.4**
3129-13 Metallurgical and materials technicians							
15 to 19 years	0	0	0	0	-	-	-
20 to 24 years	0	0	0	0	-	-	-
25 years and over	0	0	0	0	-	-	-
Sub total†	**0**	**0**	**0**	**0**	**-**	**-**	**-**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS							
15 to 19 years	5160	4810	4330	5120	-0.3	-8.4	18.3
20 to 24 years	1360	1240	1420	1650	6.6	1.9	16.7
25 years and over	770	920	1250	1400	22.1	27.2	12.5
TOTAL†	**7300**	**6970**	**7000**	**8180**	**3.9**	**-2.1**	**16.9**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
† Totals include ages other than those in the range 15 to 64
Source: NCVER unpublished apprentice and trainee data

Table 7: Mechanical engineering trade number in training by age, 31 December 1995 to 1998

	Number				Annual growth rate 1995 - 1998	Annual growth rate 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
4111 General mechanical engineering tradespersons							
15 to 19 years	110	130	130	310	39.4	6.4	139.1
20 to 24 years	160	180	210	320	25.9	14.7	51.7
25 years and over	90	100	150	200	29.8	28.2	33.1
Sub total[1]	**360**	**410**	**490**	**820**	**31.3**	**15.7**	**69.1**
4112 Metal fitters and machinists							
15 to 19 years	2070	1710	1260	800	-27.3	-21.9	-36.9
20 to 24 years	3980	3730	3170	2290	-16.9	-10.7	-27.9
25 years and over	730	630	560	430	-16.2	-12.8	-22.8
Sub total[1]	**6780**	**6070**	**4990**	**3510**	**-19.7**	**-14.2**	**-29.6**
4113 Toolmakers							
15 to 19 years	80	80	60	20	-32.6	-8.3	-63.5
20 to 24 years	120	110	110	80	-10.9	-3.5	-24.1
25 years and over	(a)	(a)	(a)	(a)	0.0	0.0	0.0
Sub total[1]	**190**	**190**	**170**	**110**	**-17.7**	**-5.3**	**-37.9**
4114 Aircraft maintenance engineers							
15 to 19 years	210	200	180	120	-16.4	-6.9	-32.6
20 to 24 years	710	720	670	590	-6.1	-2.6	-12.7
25 years and over	100	100	90	90	-5.2	-7.1	-1.1
Sub total[1]	**1020**	**1020**	**940**	**800**	**-7.9**	**-3.9**	**-15.4**
4115 Precision metal tradespersons							
15 to 19 years	200	160	120	90	-24.0	-21.5	-28.7
20 to 24 years	320	320	280	240	-9.4	-5.9	-16.1
25 years and over	180	130	90	60	-29.0	-27.5	-31.9
Sub total[1]	**690**	**610**	**500**	**390**	**-17.7**	**-15.4**	**-22.2**
Other 411 Mechanical engineering tradespersons not known at 4-digit level							
15 to 19 years	1080	1320	1470	1970	22.2	16.9	33.7
20 to 24 years	1100	1370	1640	2040	23.0	22.3	24.3
25 years and over	200	240	270	370	22.6	16.1	36.5
Sub total[1]	**2380**	**2920**	**3380**	**4380**	**22.6**	**19.3**	**29.4**
ALL MECHANICAL ENGINEERING TRADESPERSONS							
15 to 19 years	3740	3590	3230	3300	-4.1	-7.1	2.3
20 to 24 years	6380	6430	6080	5550	-4.6	-2.3	-8.8
25 years and over	1310	1190	1160	1150	-4.1	-5.7	-0.9
TOTAL[1]	**11430**	**11210**	**10470**	**10000**	**-4.4**	**-4.3**	**-4.5**

* Annual rates of growth are compound growth rates
[1] Totals include ages other than those in the range 15 to 64
Source: NCVER unpublished apprentice and trainee data

Table 8: Fabrication engineering trade number in training by age, 31 December 1995 to 1998

	Number				Annual growth rate 1995 - 1998	Annual growth rate 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
4121 General fabrication engineering tradespersons							
15 to 19 years	660	720	690	680	1.1	1.9	-0.4
20 to 24 years	830	980	1050	1070	9.1	12.8	2.0
25 years and over	110	140	180	190	22.3	29.8	8.5
Sub total[1]	**1590**	**1840**	**1920**	**1950**	**7.0**	**9.7**	**1.7**
4122 Structural steel and welding tradespersons							
15 to 19 years	1040	850	570	280	-35.3	-25.7	-51.0
20 to 24 years	1320	1310	1110	800	-15.2	-8.2	-27.6
25 years and over	120	110	100	140	4.8	-8.8	38.4
Sub total[1]	**2470**	**2270**	**1780**	**1220**	**-21.0**	**-15.1**	**-31.5**
4123 Forging tradespersons							
15 to 19 years	40	30	30	30	-10.0	-16.2	3.8
20 to 24 years	40	50	40	50	5.3	2.4	11.4
25 years and over	20	20	10	10	-6.3	-9.3	0.0
Sub total[1]	**100**	**100**	**80**	**90**	**-2.1**	**-6.5**	**7.1**
4124 Sheetmetal tradespersons							
15 to 19 years	370	300	170	90	-37.4	-32.7	-45.8
20 to 24 years	510	480	400	270	-19.7	-11.3	-34.1
25 years and over	40	40	30	20	-26.6	-16.5	-43.3
Sub total[1]	**920**	**820**	**600**	**370**	**-26.1**	**-19.4**	**-37.8**
4125 Metal casting tradespersons							
15 to 19 years	70	50	40	20	-31.3	-29.8	-34.3
20 to 24 years	120	110	100	60	-21.1	-8.1	-41.7
25 years and over	20	20	20	10	-19.3	-11.1	-33.3
Sub total[1]	**210**	**180**	**150**	**90**	**-24.0**	**-15.0**	**-39.2**
4126 Metal finishing tradespersons							
15 to 19 years	20	10	(a)	0	-100.0	-47.3	-100.0
20 to 24 years	40	30	20	10	-28.9	-23.2	-39.1
25 years and over	(a)	(a)	(a)	(a)	18.6	0.0	66.7
Sub total[1]	**60**	**50**	**30**	**20**	**-31.8**	**-28.1**	**-38.7**
Other 412 Fabrication engineering tradespersons not known at 4-digit level							
15 to 19 years	1150	1260	1290	1760	15.2	6.0	36.2
20 to 24 years	1520	1740	1880	2160	12.3	11.1	14.9
25 years and over	390	520	600	590	14.8	23.9	-1.5
Sub total[1]	**3060**	**3520**	**3770**	**4500**	**13.7**	**10.9**	**19.6**
ALL FABRICATION ENGINEERING TRADESPERSONS							
15 to 19 years	3340	3220	2780	2860	-5.0	-8.7	2.9
20 to 24 years	4380	4700	4610	4420	0.3	2.6	-4.1
25 years and over	700	840	940	960	11.5	16.0	3.0
TOTAL[1]	**8410**	**8760**	**8330**	**8240**	**-0.7**	**-0.5**	**-1.0**

* Annual rates of growth are compound growth rates
[1] Totals include ages other than those in the range 15 to 64
Source: NCVER unpublished apprentice and trainee data

Table 9: All mechanical and fabrication engineering trade number in training by age, 31 December 1995 to 1998

	Number				Annual growth rate 1995 - 1998	Annual growth rate 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
411 Mechanical engineering trades							
15 to 19 years	3740	3590	3230	3300	-4.1	-7.1	2.3
20 to 24 years	6380	6430	6080	5550	-4.6	-2.3	-8.8
25 years and over	1310	1190	1160	1150	-4.1	-5.7	-0.9
Sub total[1]	**11430**	**11210**	**10470**	**10000**	**-4.4**	**-4.3**	**-4.5**
412 Fabrication engineering trades							
15 to 19 years	3340	3220	2780	2860	-5.0	-8.7	2.9
20 to 24 years	4380	4700	4610	4420	0.3	2.6	-4.1
25 years and over	700	840	940	960	11.5	16.0	3.0
Sub total[1]	**8410**	**8760**	**8330**	**8240**	**-0.7**	**-0.5**	**-1.0**
3125-11 Mechanical engineering associates							
15 to 19 years	10	(a)	10	10	0.0	-11.4	27.3
20 to 24 years	50	60	60	50	0.0	8.5	-15.0
25 years and over	(a)	(a)	(a)	(a)	58.7	0.0	300.0
Sub total[1]	**70**	**70**	**70**	**70**	**1.5**	**4.4**	**-4.2**
3125-13 Mechanical engineering technicians							
15 to 19 years	130	300	530	600	68.4	105.3	13.3
20 to 24 years	130	320	610	530	58.8	115.1	-13.4
25 years and over	150	430	840	700	67.1	136.9	-16.9
Sub total[1]	**410**	**1060**	**1970**	**1820**	**64.9**	**120.5**	**-7.7**
3129-13 Metallurgical and materials technicians							
15 to 19 years	0	0	0	0	-	-	-
20 to 24 years	0	0	0	0	-	-	-
25 years and over	0	0	0	0	-	-	-
Sub total[1]	**0**	**0**	**0**	**0**	**-**	**-**	**-**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS							
15 to 19 years	7220	7110	6550	6770	-2.1	-4.8	3.5
20 to 24 years	10940	11520	11360	10540	-1.2	1.9	-7.2
25 years and over	2150	2460	2930	2810	9.3	16.7	-4.1
TOTAL[1]	**20310**	**21090**	**20840**	**20130**	**-0.3**	**1.3**	**-3.4**

* Annual rates of growth are compound growth rates

[1] Totals include ages other than those in the range 15 to 64

Source: NCVER unpublished apprentice and trainee data

4 AQF level

This section focuses on trends in commencements and numbers in training from 1995 to 1998 by Australian Qualification Level (AQF).

For both mechanical and fabrication trade occupations and for each year 1995 to 1998, AQF Certificate I & II level qualifications comprised a very small proportion of all commencements (tables 10 and 11).

Over the period 1995 to 1999, both mechanical engineering and fabrication engineering trade occupations experienced declines in commencements at AQF Certificate III and above qualifications.

Growth in AQF Certificate I & II level qualifications was particularly strong for mechanical engineering technicians, growing from 20 in 1995 to 1200 in 1998. Although growth occurred in AQF level III and above qualification, Certificate I & II level qualifications outnumbered Certificate III and higher level qualifications for this occupation in 1998 (table 12).

With respect to numbers in training, for both mechanical and fabrication occupations, AQF Certificate I & II level qualifications made up an insignificant proportions of all in training (tables 13 and 14).

Growth in AQF Certificate I & II level qualifications was particularly strong for mechanical engineering technicians. For mechanical engineering technicians, the number in training in AQF Certificate I & II level or equivalent qualifications grew from 30 in 1995 to 920 in 1998. Certificate I & II level qualifications outnumbered Certificate III and higher level qualifications for this occupation in 1998.

Table 10: Mechanical engineering trade commencements by AQF, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
4111 General mechanical engineering tradespersons							
Certificate I & II	(a)	0	(a)	30	40.6	-42.3	733.3
Cert. III & higher	140	120	200	510	55.4	20.8	157.4
Not known	10	(a)	(a)	(a)	-57.5	-72.3	0.0
Sub total	**160**	**130**	**200**	**530**	**50.3**	**13.1**	**165.2**
4112 Metal fitters and machinists							
Certificate I & II	(a)	0	0	30	196.2	-100.0	-
Cert. III & higher	1960	1340	920	480	-37.5	-31.5	-48.0
Not known	20	(a)	(a)	0	-100.0	-69.8	-100.0
Sub total	**1980**	**1350**	**920**	**500**	**-36.7**	**-31.9**	**-45.3**
4113 Toolmakers							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	50	50	40	(a)	-47.7	-13.1	-81.1
Not known	0	0	0	0	-	-	-
Sub total	**50**	**50**	**40**	**(a)**	**-47.7**	**-13.1**	**-81.1**
4114 Aircraft maintenance engineers							
Certificate I & II	(a)	(a)	(a)	(a)	-20.6	-18.4	-25.0
Cert. III & higher	310	260	220	130	-25.2	-14.9	-42.2
Not known	(a)	(a)	(a)	(a)	14.5	-50.0	500.0
Sub total	**320**	**270**	**230**	**140**	**-24.3**	**-15.3**	**-39.5**
4115 Precision metal tradespersons							
Certificate I & II	0	(a)	(a)	0	-	-	-100.0
Cert. III & higher	200	120	100	80	-27.4	-30.9	-20.0
Not known	20	10	(a)	0	-100.0	-25.0	-100.0
Sub total	**220**	**130**	**110**	**80**	**-29.3**	**-30.1**	**-27.6**
Other 411 Mechanical engineering tradespersons not known at 4-digit level							
Certificate I & II	(a)	(a)	0	(a)	10.1	-100.0	-
Cert. III & higher	770	1030	1100	1950	36.1	19.2	77.6
Not known	190	150	110	0	-100.0	-23.9	-100.0
Sub total	**970**	**1190**	**1206**	**1950**	**26.4**	**11.8**	**61.8**
ALL MECHANICAL ENGINEERING TRADESPERSONS							
Certificate I & II	20	(a)	(a)	60	45.1	-35.1	625.0
Cert. III & higher	3420	2930	2570	3140	-2.8	-13.4	22.5
Not known	250	180	120	(a)	-69.4	-29.1	-94.3
TOTAL	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 11: Fabrication engineering trade commencements by AQF, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
4121 General fabrication engineering tradespersons							
Certificate I & II	0	0	0	(a)	-	-	-
Cert. III & higher	610	660	600	730	6.5	-0.4	21.9
Not known	0	0	0	0	-	-	-
Sub total	**610**	**660**	**600**	**740**	**6.6**	**-0.4**	**22.1**
4122 Structural steel and welding tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	800	510	270	220	-35.2	-42.2	-18.4
Not known	(a)	(a)	0	0	-100.0	-100.0	-
Sub total	**800**	**510**	**270**	**220**	**-35.3**	**-42.4**	**-18.4**
4123 Forging tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	30	40	30	30	-3.5	-6.9	3.8
Not known	(a)	(a)	0	0	-100.0	-100.0	-
Sub total	**30**	**40**	**30**	**30**	**-4.5**	**-8.4**	**3.8**
4124 Sheetmetal tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	320	160	60	60	-43.4	-54.9	-10.9
Not known	(a)	(a)	0	0	-100.0	-100.0	-
Sub total	**320**	**160**	**60**	**60**	**-43.6**	**-55.1**	**-10.9**
4125 Metal casting tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	70	30	30	10	-46.3	-38.3	-59.3
Not known	0	0	0	0	-	-	-
Sub total	**70**	**30**	**30**	**10**	**-46.3**	**-38.3**	**-59.3**
4126 Metal finishing tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	10	10	(a)	(a)	-53.6	-68.4	0.0
Not known	(a)	0	0	0	-100.0	-100.0	-
Sub total	**10**	**10**	**(a)**	**(a)**	**-57.5**	**-72.3**	**0.0**
Other 412 Fabrication engineering tradespersons not known at 4-digit level							
Certificate I & II	(a)	(a)	(a)	(a)	-15.7	-55.3	200.0
Cert. III & higher	1130	1010	950	1870	18.4	-8.5	98.0
Not known	140	140	130	0	-100.0	-2.2	-100.0
Sub total	**1270**	**1160**	**1080**	**1870**	**13.9**	**-7.9**	**74.2**
ALL FABRICATION ENGINEERING TRADESPERSONS							
Certificate I & II	(a)	(a)	(a)	(a)	-7.2	-55.3	300.0
Cert. III & higher	2960	2410	1930	2920	-0.4	-19.2	51.1
Not known	150	150	130	0	-100.0	-6.6	-100.0
TOTAL	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 12: All mechanical and fabrication engineering trade commencements by AQF, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
411 Mechanical engineering trades							
Certificate I & II	20	(a)	(a)	60	45.1	-35.1	625.0
Cert. III & higher	3420	2930	2570	3140	-2.8	-13.4	22.5
Not known	250	180	120	(a)	-69.4	-29.1	-94.3
Sub total	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**
412 Fabrication engineering trades							
Certificate I & II	(a)	(a)	(a)	(a)	-7.2	-55.3	300.0
Cert. III & higher	2960	2410	1930	2920	-0.4	-19.2	51.1
Not known	150	150	130	0	-100.0	-6.6	-100.0
Sub total	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**
3125-11 Mechanical engineering associates							
Certificate I & II	0	(a)	10	20	-	-	81.8
Cert. III & higher	30	20	(a)	0	-100.0	-44.3	-100.0
Not known	0	0	0	0	-	-	-
Sub total	**30**	**20**	**20**	**20**	**-11.6**	**-17.0**	**0.0**
3125-13 Mechanical engineering technicians							
Certificate I & II	20	140	940	1200	267.9	525.8	27.1
Cert. III & higher	90	360	840	830	107.0	198.9	-0.7
Not known	350	770	440	0	-100.0	11.0	-100.0
Sub total	**470**	**1270**	**2220**	**2030**	**62.7**	**116.9**	**-8.4**
3129-13 Metallurgical and materials technicians							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	0	0	0	0	-	-	-
Not known	0	0	0	0	-	-	-
Sub total	**0**	**0**	**0**	**0**	**-**	**-**	**-**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS							
Certificate I & II	50	160	960	1280	198.5	347.2	33.0
Cert. III & higher	6500	5720	5350	6900	2.0	-9.3	29.0
Not known	750	1090	690	(a)	-78.9	-4.0	-99.0
TOTAL	**7300**	**6970**	**7000**	**8180**	**3.9**	**-2.1**	**16.9**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 13: Mechanical engineering trade number in training by AQF, 31 December 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
4111 General mechanical engineering tradespersons							
Certificate I & II	10	10	10	40	47.1	12.8	150.0
Cert. III & higher	300	360	450	770	36.5	21.8	71.6
Not known	50	30	20	10	-38.4	-34.8	-45.0
Sub total	**360**	**410**	**490**	**820**	**31.3**	**15.7**	**69.1**
4112 Metal fitters and machinists							
Certificate I & II	(a)	(a)	0	20	76.5	-100.0	-
Cert. III & higher	6700	6010	4960	3480	-19.6	-14.0	-29.9
Not known	80	70	30	10	-47.9	-38.0	-63.3
Sub total	**6780**	**6070**	**4990**	**3510**	**-19.7**	**-14.2**	**-29.6**
4113 Toolmakers							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	190	190	170	110	-17.7	-5.3	-37.9
Not known	0	0	0	0	-	-	-
Sub total	**190**	**190**	**170**	**110**	**-17.7**	**-5.3**	**-37.9**
4114 Aircraft maintenance engineers							
Certificate I & II	(a)	(a)	10	10	26.0	41.4	0.0
Cert. III & higher	980	980	910	770	-7.8	-3.6	-15.6
Not known	30	30	20	20	-22.3	-25.0	-16.7
Sub total	**1020**	**1020**	**940**	**800**	**-7.9**	**-3.9**	**-15.4**
4115 Precision metal tradespersons							
Certificate I & II	(a)	(a)	(a)	(a)	26.0	58.1	-20.0
Cert. III & higher	660	570	460	360	-18.1	-16.3	-21.5
Not known	30	30	30	20	-15.4	-4.7	-33.3
Sub total	**690**	**610**	**500**	**390**	**-17.7**	**-15.4**	**-22.2**
Other 411 Mechanical engineering tradespersons not known at 4-digit level							
Certificate I & II	10	10	(a)	(a)	-47.7	-24.4	-75.0
Cert. III & higher	1670	2260	2830	4010	33.8	30.0	41.6
Not known	690	650	550	370	-18.8	-10.9	-32.4
Sub total	**2380**	**2920**	**3380**	**4380**	**22.6**	**19.3**	**29.4**
ALL MECHANICAL ENGINEERING TRADESPERSONS							
Certificate I & II	40	40	40	80	26.6	2.7	92.3
Cert. III & higher	10510	10360	9790	9500	-3.3	-3.5	-3.0
Not known	880	820	640	430	-21.4	-14.4	-33.9
TOTAL	**11430**	**11210**	**10470**	**10000**	**-4.4**	**-4.3**	**-4.5**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 14: Fabrication engineering trade number in training by AQF, 31 December 1995 to 1998

	Number				Annual growth rate* 1995 - 1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
4121 General fabrication engineering tradespersons							
Certificate I & II	0	0	0	(a)	-	-	-
Cert. III & higher	1590	1840	1920	1950	6.9	9.7	1.7
Not known	0	0	0	0	-	-	-
Sub total	**1590**	**1840**	**1920**	**1950**	**7.0**	**9.7**	**1.7**
4122 Structural steel and welding tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	2430	2240	1770	1220	-20.6	-14.7	-31.4
Not known	40	20	(a)	(a)	-56.7	-56.5	-57.1
Sub total	**2470**	**2270**	**1780**	**1220**	**-21.0**	**-15.1**	**-31.5**
4123 Forging tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	100	100	80	90	-1.8	-6.0	7.1
Not known	(a)	(a)	0	0	-100.0	-100.0	-
Sub total	**100**	**100**	**80**	**90**	**-2.1**	**-6.5**	**7.1**
4124 Sheetmetal tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	910	820	600	370	-25.9	-19.1	-37.6
Not known	10	(a)	(a)	(a)	-53.6	-45.2	-66.7
Sub total	**920**	**820**	**600**	**370**	**-26.1**	**-19.4**	**-37.8**
4125 Metal casting tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	200	170	150	90	-22.9	-14.0	-38.0
Not known	(a)	(a)	(a)	0	-100.0	-42.3	-100.0
Sub total	**210**	**180**	**150**	**90**	**-24.0**	**-15.0**	**-39.2**
4126 Metal finishing tradespersons							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	50	40	30	20	-30.7	-25.9	-39.3
Not known	(a)	(a)	(a)	(a)	-39.4	-42.3	-33.3
Sub total	**60**	**50**	**30**	**20**	**-31.8**	**-28.1**	**-38.7**
Other 412 Fabrication engineering tradespersons not known at 4-digit level							
Certificate I & II	(a)	(a)	(a)	(a)	-50.0	-50.0	-50.0
Cert. III & higher	2620	3070	3370	4220	17.2	13.3	25.3
Not known	430	440	390	280	-13.4	-4.3	-29.0
Sub total	**3060**	**3520**	**3770**	**4500**	**13.7**	**10.9**	**19.6**
ALL FABRICATION ENGINEERING TRADESPERSONS							
Certificate I & II	200	200	170	180	-2.8	-7.3	7.1
Cert. III & higher	7910	8280	7910	7960	0.2	0.0	0.5
Not known	690	670	580	470	-12.2	-8.4	-19.4
TOTAL	**8410**	**8760**	**8330**	**8240**	**-0.7**	**-0.5**	**-1.0**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 15: All mechanical and fabrication engineering trade number in training by AQF, 31 December 1995 to 1998

	Number				Annual growth rate* 1995 - 1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
411 Mechanical engineering trades							
Certificate I & II	40	40	40	80	26.6	2.7	92.3
Cert. III & higher	10510	10360	9790	9500	-3.3	-3.5	-3.0
Not known	880	820	640	430	-21.4	-14.4	-33.9
Sub total	**11430**	**11210**	**10470**	**10000**	**-4.4**	**-4.3**	**-4.5**
412 Fabrication engineering trades							
Certificate I & II	200	200	170	180	-2.8	-7.3	7.1
Cert. III & higher	7910	8280	7910	7960	0.2	0.0	0.5
Not known	690	670	580	470	-12.2	-8.4	-19.4
Sub total	**8410**	**8760**	**8330**	**8240**	**-0.7**	**-0.5**	**-1.0**
3125-11 Mechanical engineering associates							
Certificate I & II	0	(a)	10	30	-	-	133.3
Cert. III & higher	70	70	60	40	-14.7	-4.7	-31.7
Not known	0	0	0	0	-	-	-
Sub total	**70**	**70**	**70**	**70**	**1.5**	**4.4**	**-4.2**
3125-13 Mechanical engineering technicians							
Certificate I & II	30	150	900	920	224.5	476.7	2.8
Cert. III & higher	90	280	710	870	116.9	189.8	21.4
Not known	290	620	360	30	-54.8	10.4	-92.4
Sub total	**410**	**1060**	**1970**	**1820**	**64.9**	**120.5**	**-7.7**
3129-13 Metallurgical and materials technicians							
Certificate I & II	0	0	0	0	-	-	-
Cert. III & higher	0	0	0	0	-	-	-
Not known	0	0	0	0	-	-	-
Sub total	**0**	**0**	**0**	**0**	**-**	**-**	**-**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS							
Certificate I & II	260	390	1120	1210	66.4	106.7	8.0
Cert. III & higher	18570	18990	18480	18360	-0.4	-0.3	-0.6
Not known	1860	2110	1580	920	-20.9	-7.8	-41.8
TOTAL	**20310**	**21090**	**20840**	**20130**	**-0.3**	**1.3**	**-3.4**

* Annual rates of growth are compound growth rates
(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

5 Geographic region by State/Territory

This section focuses on trends in commencements from 1995 to 1998 by geographic region of the residential location of apprentices and trainees by State/Territory for all occupations considered together.

- Looking at Australia as a whole for mechanical engineering trades and comparing 1995 with 1998, the number of commencements fell significantly in capital city and other metropolitan areas. Little change occurred in rural or remote areas (table 16).

- Looking at Australia as a whole for fabrication trades and comparing 1995 with 1998, the number of commencements changed little for each geographic region (table 17).

- Commencements for mechanical engineering trades fell from 1995 to 1998 for every State and Territory except Queensland and the Northern Territory.

- Commencements for fabrication trades rose from 1995 to 1998 for every State and Territory except New South Wales and Western Australia.

- Commencements for mechanical engineering technicians increased strongly for each geographic region over the period 1995 to 1998, although declines in capital city and rural regions occurred during 1998.

Table 16: Mechanical engineering trade commencements by geographic region by State/Territory, 1995 to 98

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
New South Wales							
Capital city	520	480	480	320	-14.4	-3.2	-33.1
Other metro.	210	220	240	140	-14.2	5.0	-42.8
Rural	210	220	250	310	13.3	8.4	23.7
Remote	(a)	(a)	(a)	(a)	-5.0	6.9	-25.0
Total[1]	**1000**	**940**	**1000**	**800**	**-7.0**	**0.2**	**-19.7**
Victoria							
Capital city	590	280	100	470	-7.5	-58.5	358.8
Other metro.	60	30	(a)	40	-11.6	-62.9	400.0
Rural	210	120	30	200	-1.9	-61.1	521.9
Remote	(a)	(a)	0	(a)	26.0	-100.0	-
Total[1]	**870**	**430**	**150**	**720**	**-6.1**	**-58.9**	**389.8**
Queensland							
Capital city	280	220	230	310	4.4	-8.7	36.7
Other metro.	60	50	50	100	20.5	-7.4	104.2
Rural	380	290	290	350	-2.3	-12.9	23.0
Remote	110	150	130	120	5.7	9.5	-1.6
Total[1]	**820**	**730**	**690**	**890**	**3.1**	**-7.9**	**29.2**
Western Australia							
Capital city	360	430	350	300	-5.9	-1.3	-14.4
Other metro.	0	0	0	0	-	-	-
Rural	110	110	120	100	-1.9	4.2	-13.0
Remote	60	60	60	50	-4.7	0.8	-14.8
Total[1]	**530**	**600**	**530**	**450**	**-5.3**	**-0.4**	**-14.4**
South Australia							
Capital city	200	150	130	140	-11.9	-20.6	8.6
Other metro.	0	0	0	0	-	-	-
Rural	70	80	50	50	-9.5	-11.2	-5.8
Remote	(a)	(a)	(a)	(a)	-30.7	-18.4	-50.0
Total[1]	**270**	**240**	**180**	**190**	**-11.3**	**-18.5**	**4.9**
Tasmania							
Capital city	30	40	20	20	-15.4	-16.5	-13.0
Other metro.	0	0	0	0	-	-	-
Rural	90	80	70	60	-12.0	-13.1	-9.9
Remote	(a)	(a)	(a)	(a)	-20.6	0.0	-50.0
Total[1]	**130**	**130**	**100**	**90**	**-13.4**	**-14.4**	**-11.5**
Northern Territory							
Capital city	20	20	20	30	10.5	4.9	22.7
Other metro.	0	0	0	0	-	-	-
Rural	(a)	(a)	(a)	(a)	0.0	-36.8	150.0
Remote	20	20	10	10	-6.3	-12.6	7.7
Total[1]	**40**	**50**	**40**	**50**	**3.1**	**-6.1**	**24.3**
Australian Capital Territory							
Capital city	30	10	20	20	-14.9	-19.1	-5.9
Other metro.	0	0	0	(a)	-	-	-
Rural	0	0	0	(a)	-	-	-
Remote	0	0	0	0	-	-	-
Total[1]	**30**	**10**	**20**	**20**	**-11.6**	**-21.2**	**11.1**
AUSTRALIA							
Capital city	2020	1640	1350	1600	-7.4	-18.2	18.7
Other metro.	330	290	290	270	-5.8	-5.6	-6.2
Rural	1070	890	810	1080	0.2	-13.2	33.5
Remote	200	250	210	200	0.8	4.3	-5.7
TOTAL[1]	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**

* Annual rates of growth are compound growth rates (a) Represents figures between 1 and 9 inclusive

[1] Totals include other regions such as interstate and outside Australia, and may include unknown information.

Table 17: Fabrication engineering trade commencements by geographic region by State/Territory, 1995 to 98

	Number				Annual growth rate* 1995 - 1998	Annual growth rate* 1995 - 1997	Growth rate 1997 - 1998 (%)
	1995	1996	1997	1998			
New South Wales							
Capital city	350	290	260	260	-9.5	-14.1	0.4
Other metro.	160	180	180	130	-8.4	3.3	-28.0
Rural	200	230	130	180	-4.8	-19.6	33.3
Remote	(a)	(a)	(a)	(a)	-5.9	8.0	-28.6
Total[1]	**980**	**770**	**590**	**580**	**-16.0**	**-22.1**	**-2.4**
Victoria							
Capital city	350	110	20	320	-3.3	-79.2	2000.0
Other metro.	20	(a)	0	20	11.2	-100.0	-
Rural	210	100	(a)	260	7.7	-84.4	5040.0
Remote	(a)	0	0	(a)	-20.6	-100.0	-
Total[1]	**590**	**220**	**20**	**610**	**1.3**	**-81.5**	**2940.0**
Queensland							
Capital city	220	250	210	270	6.6	-2.3	26.9
Other metro.	50	50	60	100	23.1	7.4	61.7
Rural	270	290	250	320	5.1	-4.7	27.8
Remote	50	60	60	60	3.7	7.4	-3.3
Total[1]	**610**	**650**	**580**	**750**	**7.1**	**-1.9**	**27.6**
Western Australia							
Capital city	320	290	260	250	-8.6	-9.5	-6.8
Other metro.	0	0	0	0	-	-	-
Rural	100	110	100	110	2.7	0.5	7.1
Remote	130	130	130	100	-8.5	-1.1	-21.5
Total[1]	**560**	**540**	**500**	**460**	**-6.1**	**-5.5**	**-7.3**
South Australia							
Capital city	130	140	130	130	0.3	-2.3	5.5
Other metro.	0	0	0	0	-	-	-
Rural	60	80	70	100	15.5	2.4	47.0
Remote	(a)	(a)	(a)	(a)	32.6	41.4	16.7
Total[1]	**200**	**230**	**200**	**240**	**5.9**	**-0.7**	**20.5**
Tasmania							
Capital city	50	50	50	160	50.6	-1.1	248.9
Other metro.	0	0	0	0	-	-	-
Rural	90	60	60	70	-6.6	-15.1	12.9
Remote	0	(a)	(a)	0	-	-	-100.0
Total[1]	**130**	**100**	**110**	**230**	**19.7**	**-9.9**	**111.7**
Northern Territory							
Capital city	20	20	20	30	15.2	16.3	13.0
Other metro.	0	0	0	0	-	-	-
Rural	(a)	(a)	(a)	(a)	-12.6	22.5	-55.6
Remote	10	20	10	10	-8.4	-8.0	-9.1
Total[1]	**40**	**40**	**40**	**40**	**3.6**	**10.6**	**-9.1**
Australian Capital Territory							
Capital city	10	10	10	20	14.5	8.0	28.6
Other metro.	0	0	0	0	-	-	-
Rural	0	0	0	(a)	-	-	-
Remote	0	0	0	0	-	-	-
Total[1]	**10**	**10**	**20**	**20**	**15.4**	**10.9**	**25.0**
AUSTRALIA							
Capital city	1450	1160	960	1430	-0.6	-18.7	48.5
Other metro.	230	230	240	250	1.8	0.6	4.3
Rural	940	870	620	1030	3.2	-18.5	65.5
Remote	210	230	220	180	-4.3	1.4	-14.9
TOTAL[1]	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**

* Annual rates of growth are compound growth rates (a) Represents figures between 1 and 9 inclusive

[1] Totals include other regions such as interstate and outside Australia, and may include unknown information.

Table 18: All selected occupation commencements by geographic region by State/Territory, 1995 to 1998

	Number				Annual growth rate*	Annual growth rate*	Growth rate
	1995	1996	1997	1998	1995 - 1998	1995 - 1997	1997 - 1998 (%)
Mechanical engineering trades							
Capital city	2020	1640	1350	1600	-7.4	-18.2	18.7
Other metro.	330	290	290	270	-5.8	-5.6	-6.2
Rural	1070	890	810	1080	0.2	-13.2	33.5
Remote	200	250	210	200	0.8	4.3	-5.7
Total	**3690**	**3120**	**2700**	**3210**	**-4.5**	**-14.5**	**18.9**
Fabrication engineering trades							
Capital city	1450	1160	960	1430	-0.6	-18.7	48.5
Other metro.	230	230	240	250	1.8	0.6	4.3
Rural	940	870	620	1030	3.2	-18.5	65.5
Remote	210	230	220	180	-4.3	1.4	-14.9
Total	**3110**	**2560**	**2060**	**2920**	**-2.1**	**-18.6**	**41.7**
Mechanical engineering associates							
Capital city	20	20	20	20	-7.8	-14.0	5.9
Other metro.	(a)	(a)	(a)	0	-100.0	-29.3	-100.0
Rural	(a)	(a)	(a)	(a)	-20.6	-29.3	0.0
Remote	0	0	0	0	-	-	-
Total	**30**	**20**	**20**	**20**	**-11.6**	**-17.0**	**0.0**
Mechanical engineering technicians							
Capital city	290	630	1100	960	49.5	96.5	-13.5
Other metro.	80	220	300	430	72.2	89.0	43.0
Rural	80	320	700	520	84.7	191.5	-25.8
Remote	(a)	60	50	90	133.4	167.3	78.0
Total	**470**	**1270**	**2220**	**2030**	**62.7**	**116.9**	**-8.4**
Metallurgical and materials technicians							
Capital city	0	0	0	0	-	-	-
Other metro.	0	0	0	0	-	-	-
Rural	0	0	0	0	-	-	-
Remote	0	0	0	0	-	-	-
Total	**0**	**0**	**0**	**0**	**-**	**-**	**-**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS							
Capital city	3780	3430	3430	4000	1.9	-4.7	16.6
Other metro.	650	740	830	950	13.6	13.2	14.5
Rural	2090	2070	2130	2630	7.8	0.8	23.4
Remote	410	540	480	470	4.7	7.7	-1.0
TOTAL	**7300**	**6970**	**7000**	**8180**	**3.9**	**-2.1**	**16.9**

* Annual rates of growth are compound growth rates

(a) Represents figures between 1 and 9 inclusive

† Totals include other regions such as interstate and outside Australia, and may include unknown information.

6 School attendance status

This section looks at commencements from 1996 to 1998 by the school attendance status of apprentices and trainees (tables 19, 20 and 21).

- For mechanical engineering tradespersons, the number of apprentices and trainees who commenced their apprenticeship or traineeship while still attending school comprised a very small proportion of all apprentices and trainees in this occupation.

- Similarly, for fabrication engineering tradespersons, the number of apprentices and trainees who commenced their apprenticeship or traineeship while still attending school comprised a very small proportion of all apprentices and trainees in this occupation.

- Although, for mechanical engineering technicians, the number of apprentices and trainees who commenced their apprenticeship or traineeship while still attending school comprised a very small proportion of all apprentices and trainees in this occupation, there were 80 commencements in this occupation during 1998.

Table 19: Mechanical engineering trade commencements by school attendance status, 1996 to 1998

	Number		
	1996	1997	1998
4111 General mechanical engineering tradespersons			
Still attending school	0	0	(a)
Finished school	100	180	470
Not known	30	20	60
Sub total	**130**	**200**	**530**
4112 Metal fitters and machinists			
Still attending school	0	(a)	(a)
Finished school	1280	860	430
Not known	60	60	70
Sub total	**1350**	**920**	**500**
4113 Toolmakers			
Still attending school	0	0	0
Finished school	50	40	(a)
Not known	0	0	0
Sub total	**50**	**40**	**(a)**
4114 Aircraft maintenance engineers			
Still attending school	0	0	0
Finished school	160	150	120
Not known	120	80	20
Sub total	**270**	**230**	**140**
4115 Precision metal tradespersons			
Still attending school	0	0	(a)
Finished school	110	90	70
Not known	20	20	(a)
Sub total	**130**	**110**	**80**
Other 411 Mechanical engineering tradespersons not known at 4-digit level			
Still attending school	20	(a)	(a)
Finished school	890	1160	1890
Not known	280	40	60
Sub total	**1190**	**1210**	**1950**
ALL MECHANICAL ENGINEERING TRADESPERSONS			
Still attending school	20	(a)	20
Finished school	2590	2470	2980
Not known	510	230	210
TOTAL	**3120**	**2700**	**3210**

(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 20: Fabrication engineering trade commencements by school attendance status, 1996 to 1998

	Number		
	1996	1997	1998
4121 General fabrication engineering tradespersons			
Still attending school	0	10	(a)
Finished school	620	550	610
Not known	40	50	120
Sub total	**660**	**600**	**740**
4122 Structural steel and welding tradespersons			
Still attending school	0	0	(a)
Finished school	500	260	180
Not known	10	(a)	30
Sub total	**510**	**270**	**220**
4123 Forging tradespersons			
Still attending school	0	0	0
Finished school	30	10	30
Not known	(a)	10	0
Sub total	**40**	**30**	**30**
4124 Sheetmetal tradespersons			
Still attending school	0	0	(a)
Finished school	160	60	40
Not known	(a)	(a)	10
Sub total	**160**	**60**	**60**
4125 Metal casting tradespersons			
Still attending school	0	0	0
Finished school	30	30	(a)
Not known	(a)	(a)	(a)
Sub total	**30**	**30**	**10**
4126 Metal finishing tradespersons			
Still attending school	0	0	0
Finished school	(a)	(a)	0
Not known	(a)	0	(a)
Sub total	**10**	**(a)**	**(a)**
Other 412 Fabrication engineering tradespersons not known at 4-digit level			
Still attending school	10	20	(a)
Finished school	900	1000	1820
Not known	240	60	50
Sub total	**1160**	**1080**	**1870**
ALL FABRICATION ENGINEERING TRADESPERSONS			
Still attending school	10	30	20
Finished school	2240	1910	2690
Not known	310	120	220
TOTAL	**2560**	**2060**	**2920**

(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

Table 21: All selected occupation commencements by school attendance status, 1996 to 1998

	Number		
	1996	1997	1998
411 Mechanical engineering trades			
Still attending school	20	(a)	20
Finished school	2590	2470	2980
Not known	510	230	210
Sub total	**3120**	**2700**	**3210**
412 Fabrication engineering trades			
Still attending school	10	30	20
Finished school	2240	1910	2690
Not known	310	120	220
Sub total	**2560**	**2060**	**2920**
3125-11 Mechanical engineering associates			
Still attending school	0	0	0
Finished school	20	20	20
Not known	0	0	(a)
Sub total	**20**	**20**	**20**
3125-13 Mechanical engineering technicians			
Still attending school	0	0	80
Finished school	1250	2200	1690
Not known	20	20	260
Sub total	**1270**	**2220**	**2030**
3129-13 Metallurgical and materials technicians			
Still attending school	0	0	0
Finished school	0	0	0
Not known	0	0	0
Sub total	**0**	**0**	**0**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS			
Still attending school	30	30	110
Finished school	6100	6600	7380
Not known	830	370	690
TOTAL	**6970**	**7000**	**8180**

(a) Represents figures between 1 and 9 inclusive
Source: NCVER unpublished apprentice and trainee data

7 Other training

This section looks at the general vocational education and training (VET) student population in 1998 for mechanical engineering and fabrication trade occupations but excluding those in streams in which apprentices and trainees would be expected to be most likely enrolled (that is, streams 3211, 3212 and 3221).

It should be noted that for the apprentice and trainee data presented elsewhere in this report, the ASCO code is based on apprentices' and trainees' declared vocation, that is, the actual job that they are employed in. The data presented in this section are based on occupation codes assigned to courses to indicate the most likely occupation relevant to each course. However, students undertaking a VET course may not be employed in the occupation assigned to the course, or even employed.

The data in this section therefore provide a rough estimate of the amount of non-apprentice and non-trainee VET activity relevant to the mechanical engineering and fabrication trade occupations – regardless of whether or not this training is actually utilised in these occupations.

Indications are that around 32,630 students were enrolled in a non-apprentice or non-trainee VET course in 1998 relating to the mechanical engineering and fabrication trade occupations (table 22).

Just under three quarters (73.5%) were at AQF level III or equivalent or higher levels.

In relation to non-apprentice and non-trainee VET enrolments relevant to the mechanical engineering trade occupations specifically, despite falling enrolments generally from 1997 to 1998, the number of enrolments from those still attending school rose from 150 in 1997 to 210 in 1998 (table 23).

The opposite was the case for fabrication engineering trade courses. Here, despite an overall rise in the number of non-apprentice and non-trainee VET enrolments, there was a fall in the number of enrolments from those still attending school from 460 in 1997 to 300 in 1998 (table 24).

In relation to non-apprentice and non-trainee VET enrolments relevant to mechanical engineering associates, considerable growth in enrolments generally from 1997 to 1998 was matched by strong growth in the number of enrolments from those still attending school, from less than 10 in 1997 to 170 in 1998.

For mechanical engineering technician occupation courses, a fall in the number of non-apprentice and non-trainee VET enrolments generally from 1997 to 1998 was matched by a fall in the number of enrolments from those still attending school, from 180 in 1997 to 120 in 1998 (table 25).

The number of enrolments from those still attending school for courses relevant to metallurgical and materials technicians was insignificant.

Table 22: All selected occupations: Non-apprentice and non-trainee VET students by AQF, 1998

	Diplomas	AQF Certificate IV and equivalent	AQF Certificate III and equivalent	AQF Certificates I and II	Other certificates, endorsements and other	Statements of Attainment	Non award courses	Total Students
411 Mechanical Engineering Tradespersons	710	3,090	690	100	2,090	2,190	70	8,830
412 Fabrication Engineering Tradespersons	(a)	2,640	3,930	210	80	270	520	7,660
NET SUB TOTAL	**720**	**5,730**	**4,620**	**310**	**2,170**	**2,460**	**590**	**16,460**
3125-11 Mechanical engineering associates	8,560	30	20	20	(a)	250	0	8,880
3125-13 Mechanical engineering technicians	1,320	2,510	260	1,210	0	1,740	0	7,040
3129-13 Metallurgical and materials technicians	80	80	50	0	10	20	0	250
NET SUB TOTAL	**9,960**	**2,620**	**330**	**1,240**	**20**	**2,010**	**0**	**16,170**
TOTAL	**10,670**	**8,340**	**4,950**	**1,550**	**2,190**	**4,460**	**590**	**32,630**

(a) Represents figures between 1 and 9 inclusive

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Table 23: Mechanical engineering trades: Non-apprentice and non-trainee VET enrolments by school attendance status, 1997 to 1998 (Number)

	1997	1998
4111 General mechanical engineering tradespersons		
Still attending school	120	140
Finished school	7610	2270
Not known	620	510
Sub total	**8340**	**2920**
4112 Metal fitters and machinists		
Still attending school	30	70
Finished school	2260	3840
Not known	1120	1000
Sub total	**3420**	**4910**
4113 Toolmakers		
Still attending school	0	0
Finished school	50	30
Not known	10	(a)
Sub total	**60**	**40**
4114 Aircraft maintenance engineers		
Still attending school	(a)	(a)
Finished school	1100	1110
Not known	60	130
Sub total	**1160**	**1230**
4115 Precision metal tradespersons		
Still attending school	(a)	0
Finished school	40	20
Not known	(a)	(a)
Sub total	**50**	**20**
ALL MECHANICAL ENGINEERING TRADESPERSONS		
Still attending school	150	210
Finished school	11060	7280
Not known	1820	1640
Total Enrolments	**13020**	**9120**

(b) Represents figures between 1 and 9 inclusive

Table 24: Fabrication engineering trades: Non-apprentice and non-trainee VET enrolments by school attendance status, 1997 to 1998 (Number)

	1997	1998
4121 General fabrication engineering tradespersons		
Still attending school	180	50
Finished school	820	2940
Not known	110	210
Sub total	**1110**	**3200**
4122 Structural steel and welding tradespersons		
Still attending school	280	250
Finished school	3750	3470
Not known	860	1030
Sub total	**4890**	**4750**
4123 Forging tradespersons		
Still attending school	0	0
Finished school	0	10
Not known	0	0
Sub total	**0**	**10**
4124 Sheetmetal tradespersons		
Still attending school	0	0
Finished school	0	(a)
Not known	0	0
Sub total	**0**	**(a)**
4125 Metal casting tradespersons		
Still attending school	(a)	(a)
Finished school	110	130
Not known	20	(a)
Sub total	**120**	**140**
4126 Metal finishing tradespersons		
Still attending school	0	0
Finished school	20	(a)
Not known	20	(a)
Sub total	**40**	**(a)**
ALL FABRICATION ENGINEERING TRADESPERSONS		
Still attending school	460	300
Finished school	4690	6550
Not known	1000	1260
Total Enrolments	**6160**	**8110**

(c) Represents figures between 1 and 9 inclusive

Table 25: All selected occupations: Non-apprentice and non-trainee VET enrolments by school attendance status, 1997 to 1998

	1997	1998
411 Mechanical engineering trades		
Still attending school	150	210
Finished school	11060	7280
Not known	1820	1640
Sub total	**13020**	**9120**
412 Fabrication engineering trades		
Still attending school	460	300
Finished school	4690	6550
Not known	1000	1260
Sub total	**6160**	**8110**
3125-11 Mechanical engineering associates		
Still attending school	(a)	170
Finished school	550	9050
Not known	80	70
Sub total	**640**	**9280**
3125-13 Mechanical engineering technicians		
Still attending school	180	120
Finished school	8090	5010
Not known	2610	2220
Sub total	**10870**	**7350**
3129-13 Metallurgical and materials technicians		
Still attending school	0	(a)
Finished school	260	210
Not known	50	60
Sub total	**320**	**260**
ALL MECHANICAL AND FABRICATION ENGINEERING TRADESPERSONS		
Still attending school	800	800
Finished school	24650	28090
Not known	5560	5240
Total Enrolments	**31010**	**34130**

(d) Represents figures between 1 and 9 inclusive

8 Comparison with projected employment trends

For mechanical and fabrication engineering tradespersons considered together, the total number in employment is forecast to grow from 207,600 in 1997/98 to around 209,700 in 2000/01 representing an average annual growth rate of 0.3%.[3] Given the annual growth rate for the number of apprentices and trainees in training in these occupation categories of –2.8% over the period 1995 to 1998, indications are that the number of apprentices and trainees in training as a proportion of the number employed in this occupation category will decrease from its current level of around 9%. This is further supported by the fact that the annual growth rate for commencements over the period 1995 to 1998 was –3.4%. However, if the recent strong growth in commencements persists (28.8% from 1997 to 1998) the number of apprentices and trainees in training as a proportion of the number employed in this occupation category could be expected to increase.

For mechanical engineering tradespersons considered separately (table 26), the total number in employment is forecast to grow from 131,900 in 1997/98 to 132,400 in 2000/01 representing an average annual growth rate of 0.1%.[4] Given the annual growth rate for the number of apprentices and trainees in training in this occupation category of –4.4% over the period 1995 to 1998, indications are that the number of apprentices and trainees in training as a proportion of the number employed in this occupation category will decrease from its current level of around 8%. This is further supported by the fact that the annual growth rate for commencements over the period 1995 to 1998 was –4.5%.

Table 26: Mechanical engineering and fabrication trade occupations employment forecasts.

	Average annual growth	Total employment		Share of total employment	
	97/98 - 00/01	1997/98	2000/01	1997/98	2000/01
Mechanical engineering	(% pa)	('000)	('000)	(%)	(%)
4111 General mech. engineering tradespersons	0.3	1.2	1.2	0.0	0.0
4112 Metal fitters and machinists	0.3	96.7	97.5	1.1	1.1
4113 Toolmakers	0.2	10.1	10.2	0.1	0.1
4114 Aircraft maintenance engineers	-0.6	14.5	14.2	0.2	0.2
4115 Precision metal tradespersons	-0.2	9.4	9.3	0.1	0.1
Sub total	**0.1**	**131.9**	**132.4**	**1.5**	**1.5**
Fabrication					
4121 General fabrication engineering tradespersons	0.5	0.8	0.8	0.0	0.0
4122 Structural steel and welding tradespersons	0.8	59.1	60.5	0.7	0.7
4123 Forging tradespersons	-1.0	1.5	1.5	0.0	0.0
4124 Sheetmetal tradespersons	0.8	10.6	10.8	0.1	0.1
4125 Metal casting tradespersons	0.4	1.5	1.5	0.0	0.0
4126 Metal finishing tradespersons	0.4	2.2	2.2	0.0	0.0
Sub total	**0.7**	**75.7**	**77.3**	**0.8**	**0.8**
Other					
3125 Mech. engineering associate professionals	0.9	7.2	7.4	0.1	0.1
3129 Other building & eng. ass. professionals	0.8	10.2	10.4	0.1	0.1
Sub total	**0.8**	**17.4**	**17.8**	**0.2**	**0.2**
Total	**0.4**	**225.0**	**227.5**	**2.5**	**2.5**

Source: Unpublished forecasts provided to NCVER by ECONTECH. The ECONTECH modelling methodology is described in Murphy, C. "Where the jobs are: the outlook for jobs" in P. Curtin ed *Future training issues in Australia's industries*, NCVER, Adelaide, 1999.

[3] Unpublished forecasts provided to NCVER by ECONTECH, Kingston, ACT.

[4] Ibid.

However, if the recent strong growth in commencements persists (18.9% from 1997 to 1998) the number of apprentices and trainees in training as a proportion of the number employed in this occupation category could be expected to increase.

Within the mechanical engineering tradespersons occupation, aircraft maintenance engineers and precision metal tradespersons are both forecast to decline in number in employment from 1997/98 to 2000/01.

For fabrication engineering tradespersons considered separately, the total number in employment is forecast to grow from 75,700 in 1997/98 to 77,300 in 2000/01 representing an average annual growth rate of 0.7%.[5] Given the annual growth rate for the number of apprentices and trainees in training in these occupation categories of –0.7% over the period 1995 to 1998, indications are that the number of apprentices and trainees in training as a proportion of the number employed in this occupation category will decrease slightly from its current level of around 11%. However, if the recent strong growth in commencements persists (41.7% from 1997 to 1998) the number of apprentices and trainees in training as a proportion of the number employed in this occupation category could be expected to increase.

Within the fabrication engineering tradespersons occupation, all sub-categories were forecast to grow in number in employment except for forging tradespersons.

Economic considerations

The trend in manufacturing employment has been fundamentally flat since 1994/95. However, with the Asian Economic Crisis came a lowering of commodity prices which triggered a depreciation in the Australian dollar. This in turn made imports dearer thereby improving the competitiveness of local producers against imports. Employment in manufacturing is therefore expected to experience low growth over the short term.

There are differences between growth rates for various sub-divisions within the manufacturing industry. Strong employment growth in the Printing, Publishing and Recorded Media sub-division is expected to continue. On the other hand, employment is expected to fall in the textile, clothing, footwear and leather sub-division due primarily to tariff cuts to the year 2000. Strong productivity growth is also limiting employment growth in this sub-division.

[5] Ibid.

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